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Chi Duong

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EXAMINER

KHANNA, MADHU

ART UNIT

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4117

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/754,932	Applicant(s) DUONG, CHI	
	Examiner Madhu Khanna	Art Unit 4117	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/08/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1, 5, 8-10, 12 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Susai et al. (US 6,725,272) (referred to as Susai hereafter).

Regarding claim 1, Susai discloses a method/system of dynamically quiescing an application (putting client on-hold) (column 2 lines 44-48), said method/system comprising:

providing a server environment (an interface unit connecting a plurality of servers to the Internet, which is in turn connected to a plurality of clients and on-hold server(s), column 2 lines 48-51), said server environment operable to send requests (interface unit passes client's request it to the requested server, column 6 lines 25-27) and receive responses (interface unit receives a response from the requested server, column 6 lines 27-29) over a network and comprising a front end (interface unit) operative to execute a front end application for receiving a request (a connection is opened between interface unit and the requesting client, and interface unit receives the client request, column 5 lines 6-9) and a back end (server) operative to perform a task responsive to said request (server processing, column 6 lines 27-29);

evaluating (step 306 of Fig. 3) a back end response time for performing said task by said back-end (requested server) (column 5 lines 23-24);

comparing (step 308 of Fig. 3) the back end response time with a response time threshold value (column 5 lines 50-51);

disabling a front end application (put the client, from which requests are received by interface unit, on hold, 310 of Fig. 3) for a period of time based on said act of comparing the back end response time with a response time threshold (column 5 lines 59-63).

Regarding claim 5, wherein the front end (interface unit) comprises a plurality of web servers (on-hold servers (representing the world's largest web site) can be physically located within interface unit, column 4 lines 25-29).

Regarding claim 8, wherein the value of the threshold response time is predetermined (maximum response time allowed, column 5 lines 50-56).

Regarding claim 9, wherein the value of the period of time is predetermined (determines the approximate waiting time, column 8 lines 51-54).

Regarding claim 10, a system (computer system capable of carrying out the functionality described herein, column 12 lines 4-9) for dynamically quiescing (putting on hold) an application, comprising:

a computer (900 of Fig. 9) having a processor (904-906 of Fig. 9) (as described by Susai, column 12 lines 10-11), a memory interface (920 of Fig. 9) coupled with said processor, a memory (908 and 910 of Fig. 9) coupled with said processor and said memory interface (as described by Susai: column 12 lines 18-20), a front end interface (client) operable to communicate with a front end in a server environment (the client has the same structure as the typical computer as described by Susai, column 12 lines 43-57), and a back end interface operable to communicate with a back end in the server environment (column 12 lines 43-57);

a first logic stored in said memory and executable by said processor to receive first data (current response time) via said back end interface (requested server), said first data comprising a back end response time (current response time of the requested server is estimated by interface unit by using actual past response times, column 5 lines 23-25);

a second logic stored in said memory and executable by said processor to receive second data via said memory interface, said second data comprising a back end (server) response time threshold value (column 5 lines 50-53);

a third logic stored in said memory and executable by said processor coupled with said first and second logic and operative to compare said first data (current response time) and said second data (threshold value) (column 5 lines 50-51) and generate a result indicating whether the value of the first data (response time) is greater than the value of the second data (threshold value) (column 5 lines 61-62); and

a fourth logic stored in said memory and executable by said processor coupled with said third logic to send an instruction to disable (put on-hold) an application operating on said front end (interface unit) by way of the front end interface (client) based on said result (if the server cannot provide acceptable response time, then interface unit is directed to put its clients on-hold, column 5 lines 59-62).

Regarding claim 12, this claim comprises limitations substantially the same as those discussed on claim 5 above, same rationale of rejection is applicable.

Regarding claim 15, this system claim comprises limitation(s) substantially the same as those discussed on claim 1 above, same rationale of rejection is applicable, wherein the method steps further comprise the modules for performing respective function/steps discussed therein, same rational of rejection is applicable.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 2 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Susai in view of Togasaki (US 2003/0088672) (referred to as Togasaki hereafter).

Regarding claim 2, Susai teaches wherein the front end comprises a web server (column 4 lines 25-26); however, although Susai teaches that the server stores information that is intended to be accessible over the web (column 1 lines 33-36), Susai does not explicitly disclose that the back end server comprises a database.

Togasaki teaches the back end (back-end server) comprises a database (paragraph [0026]).

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention given the desirability of Susai to improve the performance of servers on a network, such as the Internet, the teachings of Togasaki for routing transactions to front-end and back-end servers more efficiently. One of ordinary skill would recognize that routing a transaction or request to a server based on attributes specific to the transaction or request would improve the interplay between front-end and back-end servers. One would be motivated to utilize the teaching of Togasaki because in doing so the availability of servers would be enhanced, resulting in an improved flow of requests and transactions.

Regarding claim 13, wherein said back end (back-end server) comprises one or more database servers (Togasaki: [0026]).

6. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Susai in view of Togasaki and in further view of Islam et al. (US 2004/0103194) (referred to as Islam hereafter).

Regarding claim 3, Susai-Togasaki does not explicitly disclose middleware that mediates the interaction between a front-end server (interface unit) and the back-end server (server).

Islam teaches wherein the server environment further comprises middleware (access point, 18 of FIG. 2) (as described by Islam, paragraph [0043]).

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention given the desirability of Susai-Togasaki to guarantee network client-server response time by putting client requests on-hold when the server response time exceeds a predetermined threshold, the teachings of Islam for server load balancing in a client-server network based on wait time. One of ordinary skill would recognize that a load balancer, which intercepts client requests and selects an execution server based on the computations of wait times, would improve management of the processing of client requests and help to reduce the average response time. One would be motivated to use the teachings of Islam because in doing so the system/method of Susai-Togasaki would be further enhanced by improving the flow of client requests directed to a plurality of servers and providing a guaranteed response/wait time for the user.

Regarding claim 4, wherein the front end (interface unit) comprises a plurality of web servers (Susai: on-hold servers (representing the world's largest web site) can be physically located within interface unit, column 4 lines 25-29), the middleware comprises a plurality of application servers (Islam: access point, 18 of FIG. 2) and the back end comprises a plurality of database servers (Togasaki: [0026]).

7. Claims 6-7, 11, 14, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Susai in view of Islam.

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Regarding claim 6, comprising the act of increasing a counter when the response time has exceed the threshold response time (Islam: determines the number (by maintaining a consecutive count) of blocked requests [0087]); and comparing the counter with a counter threshold value (Islam: given threshold value B_T, [0087]).

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention given the desirability of Susai to improve the performance of servers on a network, such as the Internet, the teachings of Islam for server load balancing in a client-server network based on wait time. One of ordinary skill would recognize that a load balancer, which intercepts client requests and selects an execution server based on the computations of wait times, would improve management of the processing of client requests and help to reduce the average response time. One would be motivated to use the teachings of Islam because in doing so the system/method of Susai would be further enhanced by improving the flow of client requests directed to a plurality of servers and providing a guaranteed response/wait time for the user.

Regarding claim 7, wherein the counter threshold value is predetermined (Islam: a given threshold value B_T, which is set by the system administrator, [0087]).

Regarding claim 11, comprising:

a fifth logic stored in said memory (Susai: 908 and 910 of FIG. 9) and executable by said processor (Susai: 904 of FIG. 9) coupled with said third logic to maintain a cumulative value (Islam: number of blocked requests, [0087]) of instances in which the

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third logic has indicated that the value of the first data (back end response time) (Islam: A(W), [0079]) is greater than the value of the second data (back end response time threshold) (Islam: A_T, [0079]).

Regarding claim 14, wherein said middleware (access point) comprises one or more application servers (Islam: access point, 18 of FIG. 2) (as described by Islam, [0043]).

Regarding claim 16, this system claim comprises limitation(s) substantially the same as those discussed on claim 11 above, same rationale of rejection is applicable, wherein the system logic further comprise the modules for performing respective function/steps discussed therein, same rational of rejection is applicable.

Regarding claim 17, this system claim comprises substantially the same limitation(s) as discussed on claim 16, same rationale of rejection is applicable. Further, limitation(s) include: comprising a means (Islam: load balancing agent, [0087]) for maintaining a cumulative value (Islam: number of blocked requests, [0087]) of instances in which the back end response time is equal to the backend response time threshold (load balancing agent transmits the client request if the value for A(W) is less than A_T, otherwise the load balancing agent will block requests, [0079]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Madhu Khanna whose telephone number is 571-270-3629. The examiner can normally be reached on Mon-Thurs 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beatriz Prieto can be reached on 571-272-3902. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Khanna/
Examiner, Art Unit 4117
10/31/07